DENVER PC BOARDWATCH

NEWSLETTER FOR ELECTRONIC BULLETIN BOARDS AND ON-LINE SERVICES

TELE-BITS

THE BBS LIST
This month **Denver PC Boardwatch** presents a list of **199** bulletin boards/on-line services available in area code 303 - see page **12**. A total of **12** BBS were deleted from the August list with **9** additions. Each number is verified by actual telephone contact within the **30** days preceding publication. Additions and major changes to the list are highlighted in bold-face type. Corrections may be addressed via the **Denver PC Boardwatch** Echomail Conference, by Fidonet Mail addressed to **JACK RICKARD** via Net **104** Node **555**, **JACK.RICKARD** on the General Electric **GEnie** information service, **BOARDWATCH** on the new **1-976-GEIS** service or 71471,561 on Compuserve.

DIALOG DATABASE SERVICE SOLD
Kight-Ridder has agreed to purchase Dialog Information Services from Lockheed Corporation at a price of **$353** million. Dialog provides an array of **320** fun-filled information databases on a wide variety of subjects to slightly over **90,000** subscribers around the world. Dialog annual revenues approach **$100** million and most analysts were surprised by the **$353** million figure. Dialog Information Services Inc., 3460 Hillview Ave., Palo Alto, CA 94304; **(800)334-2564.**

HAND HELD LANGUAGE TRANSLATOR
Advanced Products and Technologies Corp. of Redmond Washington has introduced a hand-held device to translate spoken speech from English to French, Spanish, German, or Italian. The device uses language cartridges holding up to **10,000** five-word phrases. To use the unit, speak into the microphone. A **16**-line **LCD** screen displays the spoken phrase. Press the **TALK** button and the device will produce an audible spoken translation in the language of choice. Alternately, the translation can also be displayed on the screen. The company intends to develop additional language cartridges. The price translates into **$1500** US dollars. Advanced Products and Technologies, 15444 NE 95th, Redmond, WA 98052; **(206)883-8297.**

LONG DISTANCE CARRIER ID
You can confirm which long distance carrier is your primary carrier by dialing **(700)555-4141**. A voice recording will identify the service Mountain Bell lists as your primary carrier for that line.

USA TODAY NEWSPAPER DISTRIBUTION BBS
To aid in distributing the *USA Today Decisionline Update* Electronic Newspaper to BBS sysops around the country, **Denver PC Boardwatch** has inaugurated a new BBS service operating at **(303)973-4222**. The new system runs on Adam Hudson's **QuickBBS** software in combination with the **Binkley** mail handling software and operates as part of the Fidonet international mail system as net **104** node **555** in the matrix. The board allows participating BBS system operators to download the **USATODAY.ARC** file each morning for display on their systems. The board also features the product in an on-line menu display for perusal by interested system operators and the general public. The *USA Today* newspaper is made available to BBS systems at prices as low as $12 monthly for free/hobby BBS and as low as $25 monthly for commercial "pay" systems.

HOW MANY BBS ARE THERE?
How many bulletin boards are in operation? No one knows for sure and undoubtedly, the numbers fluctuate from moment to moment. But we can make a projection if we assume the distribution of Fidonet versus non-net BBS holds true world-wide. For example, here in Denver we currently list **54** Fidonet BBS out of a total count of **199** this month. A little over **27%** of all BBS in the Denver area belong to the Fidonet. The Fidonet node list for the final week of July listed **3727** separate nodes. If we assume this is a little more than **27%** of the BBS in operation, we come to the startling conclusion that some **13,735** BBS are currently up and running. From our perspective, that would certainly be a challenging list to verify each month....

TEXT TO SPEECH POPUP PROGRAM
CSSL Inc., of Seal Beach California has introduced a **TSR** (Terminate and Stay Resident) popup program termed **Monologue** that can read any text or numeric data from your computer screen - out loud. The program converts electronic mail, text documents, or other data to spoken English heard through a set of headphones connected to a parallel port. The program, including the headset, is priced at **$189.95** and purports to work well with all popular software programs. The program does require **256 KB** of **RAM**. CSSL, Inc., 909 Electric Ave., Seal Beach, CA 90740; **(213)493-2471.**

IBM STATS
IBM enjoyed $54 billion in sales during 1987. Manning for the corporation stands at 396,400.

BIBLE PRINTED ON WALLET-SIZED CARD
Timecards Inc. has introduced a Bible inscribed on credit card size card by laser printer. The entire text of both the old and new testaments is scribed in characters so tiny a 100X microscope is needed to read it. The cards are $4.95 each from Themecards Inc. 2644 Bayshore Parkway, Mountain View CA 94043.

FREE E-MAIL ADDRESS REGISTRY
Ken Steele is president of the **National E-Mail Registry** and reports that the service currently contains 23,000 entries. The Electronic Mail Association claims there are 4.25 million E-mail users but only 1.75 million use public E-Mail services - the rest are on internal corporate systems. Registration on the National E-Mail registry is totally free via a toll-free 800 number. To register your commercial E-Mail or Fidonet mail address, call (800)622-0505. An accompanying white pages service number operates at (203)245-7720. You may dial this service and search the database to find a particular individuals E-Mail address at $0.20 per successful search. If everyone would register, this would be a valuable service. National E-Mail Registry, 3 Neshaminy Interplex, Trevose, PA 19047. Their E-Mail address? MCI Mail: **RHERFF**; CompuServe: **72147,126**

APPLE COMPUTER INCOME SKYROCKETS
Apple Computer Inc. reported financial results for the quarter ending July 1 at a net income of slightly over $91 million - a 71% increase over the $53.5 million earned during the same period a year earlier. Total sales were $993 million - a 56% increase from the $637 million for third quarter 1987.

SPRINT - GTE PART COMPANY
GTE Corporation said it intends to sell its 50% stake in **US SPRINT** to partner United Telecommunications Inc. The company is selling 30.1% of **US SPRINT** immediately for $600 million and United Telecom will have an option on the remaining 19.9% until 1996. GTE reportedly had already lost over $1.5 billion in the long distance venture.

While **US SPRINT** has been plagued by billing and service problems, the quality of their voice lines have improved steadily. Much of the loss is attributed to a multi-billion dollar investment in Fiber Optic transmission lines. The company officially switched the last of its customers over to fiber May 31, 1988. They now have 20,188 miles of fiber optic cable in place and are essentially 100% fiber in operation. Recall from our January 1988 issue that Denver area customers can try out the Sprint fiber lines by simply prefacing long distance calls with the US Sprint equal access code - 10333. Simply dial 10333, the desired area code, and the number. Your call will go out over Sprint lines and you will be billed by Sprint on your regular Mountain Bell bill - two or three months later in some cases.

TELIX 3.00 RELEASED
Colin Sampaleanu of Ontario Canada operates a company titled PTel to distribute his communications software product **TELIX**. The program has gained a reputation for uncluttered screens, lightning quick performance, and trouble-free operation. A long awaited version 3.00 update, originally expected last February, was finally released July 1.

The most notable changes in the version 3.00 release include an integral, seamless implementation of Chuck Forsberg's immensely popular **ZModem** file transfer protocol. Within the last year, **ZModem** has become known as the fastest, most reliable file transfer protocol available but few communications packages have included it. Those that have generally feature the program as an external protocol using the DSZ file provided by Mr. Forsberg. Yet **ZModem** is the protocol of choice among **OPUS** and **BINKLEY** BBS system operators. Heretofore, **BINKLEY TERM** was the only terminal program to incorporate the **ZModem** protocol directly in the program and Binkley is used more as a mail handling system rather than a terminal package since its terminal features are rather basic.

The new **Telix** also expands the number of dialing directory entries from 150 to the current 1000 while allowing multiple dialing directories. A new script language titled Script Application Language for Telix (**SALT**) has to rank as one of the most capable script languages available for communications applications. The language resembles nothing so much as Kernighan and Ritchie's **C** programming language in structure and form. Scripts are written using any editor and compiled using a provided program titled **CS.EXE**. The result is small, extremely fast scripts that can be made to do most anything. A full featured host mode is provided via a **SALT** script.

The new program provides **DEC VT102** and **VT52** terminal emulations and requires but 160 KB of RAM memory to operate. It can support up to 8 **COM** ports in a variety of comm configurations. The program comes in two archive files titled **TLX300-1.ARC** (228,352 bytes) and **TLX300-2.ARC** (134,134 bytes). The -1 package contains the **TELIX.EXE** program,

some configuration files, and some scripts. The -2 package contains some fairly in-depth documentation on the **SALT** program and on **TELIX** itself. By installing the **TELIX.EXE** and config files on a floppy diskette, it is quite feasible to run **TELIX** from a single floppy drive.

Aside from features provided, part of the attraction to **Telix** is its shocking speed of operation. While most communications shareware is maturing by adding more and more features that run slower with each successive release, PTel seems to remain committed to speed as a priority. **Telix** responds to keyboard strokes with a noticeably snappy action. File transfers are largely flawless.

There are two bugs in the **3.00** release. The **Compuserve B** file transfer protocol is somewhat unreliable and the scroll back feature that allows you to review your on-line activity can produce some unexpected screen displays. These flaws seem almost inconseqential but a "fix" upgrade should be available shortly in any event. Overall we find **Telix** to be an excellent example of shareware communications software.

With the increasingly ponderous operation of the new **ProComm Plus** release and the continued "crippleware" approach by **GT Power Comm**, **Telix** has already become the comm package of choice among sysops and the more knowledgeable users and may well become the top package for us all. The registration fee remains a reasonable **$35**. PTel, PO Box 130, West Hill, ONT M1E 4R4. Mr. Sampaleanu operates a support BBS at **(416)284-0682**. Locally, you can obtain a copy of Telix from most local BBS or by downloading from the **Denver PC Boardwatch Roundtable** area on General Electric's GEIS service at **1-976-GEIS**. Once on **GEIS**, enter **BOARDWATCH** to access the **Denver PC Boardwatch Roundtable** area.

C.A.R.L. NEWSLETTER AVAILABLE

Among all major metropolitan areas in the country, Denver must be one of the very best cities in which to own a modem. Over **200 BBS** serve the area. The National Bureau of Standards maintains the Automated Computer Time Service in Boulder. Users dial in from all over the world to synchronize their systems to the US national time standard - for us, a local call. And most importantly, virtually the entire library system available in the state of Colorado is available on-line through the **Colorado Alliance of Research Libraries (C.A.R.L.)** Public Access Catalog - an on-line card catalog system. This service is absolutely free and provides one of the richest depositories of information available on-line anywhere at any price.

Essentially, the service allows you to dial in at **300, 1200**, or **2400 bps** and search a card catalog containing **2,781,645** records covering books and periodicals held in eight regional libraries. The records can be searched by title, author, or subject. The records contain all pertinent information on the publication including author, publisher, title, subject, a brief synopsis, the library facility that holds it, the call number, and whether or not it is currently checked out or on loan. Currently you must specify the particular library to be searched. Work is under way to create a global search system to search all libraries via one request.

The system runs on an eight-processor **Tandem TNS II** computer. Over **500** dedicated terminals are connected to it from various libraries and university centers. Nine dial-up lines allow users to call up the system from the comfort of their living rooms using any PC and modem. The system has proven so popular that it currently handles over **1.7** million transactions daily from **30,000** users - including **450** calls daily over the dial-up lines. The table below lists the member libraries and the number of records available for each as of June 21, 1988:

CARL HOLDINGS	
LIBRARY	**RECORDS**
Auraria Library	417,525
Colorado School of Mines	89,330
University of Colorado at Boulder	652,684
Denver Law School	11,376
Denver Public Library	482,731
University of Denver	538,768
Regis College	81,874
Univ. of N. Colorado at Greeley	280,559

In addition to the Public Access Catalog, **CARL** also provides the Grolier's American Academic Encyclopedia on-line. This encyclopedic database is a special surcharge feature on most commercial services such as Compuserve. On **CARL** it's free. A Government Documents database sports over **225,000** entries. A Metro Denver Network provides info on business activity in the area.

The following table lists the dial-up access numbers for **CARL** and their bps capabilities. All connections should be made at **8** data bits, **1** stop bit, and No parity. Your communications software may refer to this as **8N1**.

CARL TELEPHONE NUMBERS

TELEPHONE	BPS
(303)830-1165	300/1200/2400
(303)830-2199	300/1200/2400
(303)830-2241	300/1200/2400
(303)830-2265	300/1200/2400
(303)830-2297	300/1200/2400
(303)830-1546	1200
(303)830-1547	1200
(303)830-1548	1200
(303)830-0519	2400

The entire system is supported by a staff of six people. Recently, we received a copy of their new bi-monthly newsletter *ON CARL*. Edited by John Garralda and Rebecca Lenzini, *ON CARL* is an informative, attractive, and most importantly, **FREE**, four-page issue featuring news and descriptions of various **CARL** services offered. **CARL** is widely acclaimed as one of the best automated library systems in the country. If you have children in grade school, high school, or college, or are required to put together reports etc. yourself and don't have access to **CARL**, you're not using your PC and modem to its fullest potential. Our highest recommendation. Call or write for free newsletter subscription. *ON CARL*, 777 Grant, Suite 304, Denver, CO 80203; **(303)861-5319**.

TBBS VERSION 2.1 RELEASE DELAYED
Version **2.1** of the popular bulletin board software package The Bread Board System (**TBBS**) has been delayed until around the first week of October - according to the program author and President of eSoft Inc., Phil Becker. Summer struck eSoft with a vengeance, delaying the scheduled August release of the new version. "Right now we're hoping to have upgrade packages for conference attendees in September" said Becker "with a normal release cycle beginning the following week".

A conference of registered **TBBS** system operators is scheduled for September **23** through **25** at the Clarion Denver Southeast hotel in Englewood to introduce the enhanced features of version 2.1. The conference is titled the *First Annual TBBS User Group Symposium.* Approximately **100** to **150** attendees from around the nation are expected at the two-day weekend event. Registration is **$100** if postmarked prior to August 24 and **$125** afterwards.

The new 2.1 release is expected to include new file transfer protocols including **SEAlink, Kermit,** and **Y-**

Modem Batch. The internal mail system will include distribution list mailing, a carbon copy function, and a return receipt feature. Most notable is a database function allowing simple string searches of text files. According to Mr. Becker, the text search function should address some of the simple things operators are wanting to do regarding the presentation of information in a database style operation.

In the BBS world, **TBBS** is viewed as a high-end product. The basic single-line package lists for **$295** with a multi-line package capable of supporting up to **16** telephone lines via two Digiboard 8 port serial cards going for **$895** for the software alone. The digiboards cost a little over **$600** each and each line requires a modem of course. **TBBS** seems to have become the package of choice among operators of commercial or "pay" BBS that offer on-line services for an annual, quarterly, or hourly fee. Mr. Becker estimates **800** to **1000** systems are currently installed in this category.

Locally, Larry Kayser's **PHOENIX TBBS** at (303)841-9570 runs **TBBS** on four telephone lines at subscriber rates starting at **$9** quarterly. One of the features attracting system operators and users is the chat mode. This is much like Compuserve's CB feature in that callers on different telephone lines can chat with one another and the sysop. The chat mode is available to registered subscribers on **PHOENIX** although anyone can call Mr. Kayser's system for a look around. **PHOENIX** also features a wealth of on-line publications including *USA Today Newspaper* each weekday morning as well as Alan Bechtold's popular electronic weekly computer magazine *INFOMAT.*

Surprisingly, the largest market for **TBBS** seems to be among corporations and governmental entities. Software support boards are represented along with military, NASA, educational institutions, and libraries. In all, **TBBS** enjoys an installed user base in excess of **10,000** systems with many operated as private in-house communications resources by corporations. **TBBS** can be found in countries around the world - we've sighted boards in England, Wales, Italy, and we hear there is a public system in Chad.

One big advantage offered by **TBBS** is the multi-line capability. With shareware/public domain products such as RBBS, OPUS, PCBoard, Wildcat, and others, if you put up a board and are swamped by callers, there is really nowhere to go. Although some of these packages offer a multi-node style capability - they are almost all awkward and lacking in reliability.

With **TBBS**, you can start out with the single line package at **$295**. If you are overcome by success, you

simply plug in a digiboard, buy some more modems, order some additional telephone lines installed, and trade in your single line package for the multi-line by paying the price difference. Installation requires very little since all menus, file areas, and files can be retained virtually without change. Theoretically, you could convert from a single line system to **16** lines overnight. From the user's point of view, there will be little change and essentially, no degradation in system speed on AT class machines.

TBBS is written in assembly language for speed and compact size. Incredibly, the entire system in the current **2.0** multiline package resides on a single **360 KB** floppy diskette. For more information on **TBBS** or to register for the September **TUG** Symposium, contact eSoft, Inc., 15200 East Girard Ave., Suite 2550, Aurora, CO 80014; **(303)699-6565**. An on-line BBS featuring a **TBBS** fact sheet is available at **(303)699-9248.**

MANYLINK FOR PC
Much of the current push in PCs is toward local area networks. Though improving, these sytems tend to be expensive, cumbersome to operate, problematical when it comes to security, and generally require a slot in your PC. If all you need to do is share printers and hard disk drives among several PCs - there may be simpler alternatives.

NetLine, Inc., of Provo Utah currently offers a cunning little package titled ManyLink. Manylink can be used to connect up to a couple of hundred PCs via serial ports and telephone wire. The system is remarkably simple, and for some applications, may be all you'll ever need.

In its simplest form, ManyLink connects two PCs via serial ports. It consists of about **25** foot of telephone cable with both **DB-25** and 9-pin connectors on both ends, loopback serial test connectors, and **TSR** popup software on disk. In the version **2.0** copy we reviewed, ManyLink could only operate from **COM1** or **COM2** though the documentation specifically alluded to **COM3** or **COM4** operation. Incredibly, we have a roomful of equipment including mice, modems, plotters, printers, and other assorted serial devices - they all work off of **COM1** or **COM2**. COM1 and COM2 are very popular connectors. We'll be just damn euphoric when we receive something that works from **COM3** or **COM4**. We paid for **COM3** and **COM4** too and it would really be a fine thing to just once see something hooked up to them. We understand that the next version of ManyLink will support **COM3** and **COM4**.

The installation takes you pretty much step by step. A test program allows you to actually test your serial

ports using the loopback connectors before installing ManyLink. Each of the two computers must be named. We called ours **JACKAT** and **JACKXT** - not very imaginative, but it worked.

One of the main features of ManyLink is a very adept facility for printer redirection. You can specify that **JACKXT**, for example, will do all printing via **JACKAT LPT1**. Not only will ManyLink print to the printer connected to **JACKAT LPT1** from **JACKXT** via the popup ManyLink window, but any **DOS** print commands will operate similarly. In fact, printing from application programs such as Word Perfect, Multimate, or Ventura Publisher will be routed through the serial cable, spooled onto the **JACKAT** hard drive, and printed out on **JACKAT LPT1** printer. And the spooling happens in the background. You can still use **JACKAT** (as well as **JACKXT** for that matter) in the foreground with a less than **5%** degradation in performance. Effectively, you can share printers easily between machines and gain background print spooling limited only by hard drive size to boot.

ManyLink also makes **ALL** disk drives available from either computer. **JACKXT** has access to **JACKAT A: C:** and **D:** and **JACKAT** has access to **JACKXT A:B:C:** and **D:.** Directories can be read, files typed, and files transferred at a speed of **19,200 bps**. Initially, this seems a bit slow compared to the **115,000 bps** that is becoming more common in null modem transfers. However, you really have to play with ManyLink to catch on to what is going on. While transferring a **70 KB** file from **JACKAT** to **JACKXT**, we decided to read a directory on **JACKXT** from **JACKAT**. We usually have some incredible luck in crashing programs, locking up systems, and so forth with these type of "what if" tests. ManyLink didn't even flinch. So we printed a file from **JACKXT** to **JACKAT**, transferred a file from **JACKAT** to **JACKXT**, and typed a file from a **JACKXT** directory from the **JACKAT** keyboard. Disk drive lights were flashing, drive motors were whirring, the printer was printing, the screens were all flickering and we were seriously considering evacuating the building. But it all worked as advertised with data traveling in two or three directions over that serial cable simultaneously. It was impressive. Even if you try to transfer another file while a transfer is being performed, it simply tells you the link is loaded and to try again later.

The program also featured directory locking and file encryption to make sure not everything is shared. Finally, a chat mode lets you very simply send a message from one computer to another.

We liked the fact that most ManyLink operations can be initiated from either a **TSR** popup window or directly from the **DOS** command line. In fact, the program

info on actual espionage cases where individuals, companies, and countries have been caught buying, selling, and trading not only our high tech equipment but apparently our secrets as well. For example, the system sports the Report of the Drammen Norway Police Department on their investigation of the transfer of technology from the Kongsberg Vaaperfabrikk to the Soviet Union. This was the milling equipment sale. The board also provides info on cases as common as that involving the sale of the maintenance manual for the Navy's **Mark 48** torpedo. Most interesting were some responses from Soviet sources to the "transfer of technology" stories appearing in the western press. Finally, we found **THE** best list of Federally sponsored electronic bulletin boards we've seen anywhere.

Paul Haag is sysop of **ELISA II**. Correspondence may be directed to: Director, Industrial and Governmental Liason, Defense Technology Security Administration, The PENTAGON (2E518), Washington, DC 20301-2700 or call **(202)697-7840**. The board is free and open to the public but it is intended for companies applying for an export license. So far, they've been getting about **8** calls a day. **ELISA I** first went on-line on May **15, 1985** so the concept is not new. The federal government often has the very best systems usually free of charge. They just don't do much to "put the word out" about them.

NASA SPACE SCIENCE DATA CENTER
The National Aeronautics and Space Administration in Washington D.C. runs a marvelous on-line service titled the **National Space Science Data Center (NSSDC)** at **(301)286-9000** on a **VAX 11/780** computer. Probably because of the **VAX** host, this system is very different from your normal, every day local QuickBBS system. Once you connect, it will ask you for a **NUMBER:** Enter the system acronym **NSSDC**. It will then ask for **USER:** Enter the **NSSDC** acronym again.

The system contains a wealth of technical information and if your looking for casual conversation, a game of tradewars, and the latest in utility software, this may not be the place. However, we did find some interesting data. The system features a Central On-line Data Directory that allows keyword searches. The database contains information concerning various spacecraft and the experiments carried on each. We learned, for example, that the **AMPTE-CCE** spacecraft carries a dipole antenna used in a plasma wave experiment designed by a Dr. Frank Scarf.

In another area of the system, we found an excellent electronic newsletter titled **CANOPUS** edited by William Taylor of the American Institute of Aeronautics and Astronautics. In the July issue, we learned that Dr. Frank Scarf had actually died that month while in Moscow. He had done a great deal of work with the Soviets on Venusian Lightning.

In yet another area, we learned that data was available from a program titled **NIMBUS**. Essentially, the program is designed to map ozone levels in the atmosphere. Bruce McLendon and Pat Sisson seem to be the sysops.

FCC PUBLIC ACCESS LINK
The Federal Communications Commision now operates an on-line information service in Washington at **(301)725-1072**. The primary purpose of the system seems to be to track status of Equipment Authorization Applications. Apparently, **FCC** authorization is required for most types of computing equipment as well as all equipment to be connected to the telephone system. This service provides a database where applicants can call and check the status of their application.

We also found an interesting and perhaps useful list of over **100** laboratories around the world certified by the **FCC** as test sites capable of measuring various parameters required in equipment applications. The service also had areas for public notices, rulemakings, bulletins on measurement procedures, and application tips.

Applicants have an **FCCID** assigned to their case when their application is submitted. They can enter this ID for extended access to the system. General public is limited to 5 minutes per call. FCC Authorization and Evaluation Division, 7435 Oakland Mills Road, Columbia, MD 21046.

SHAREWARE

WHEREIS.ARC
Lotus Development's popular 123 and Microsoft's comer EXCEL may joust bitterly over the lucrative spreadsheet market. Likewise, R:Base, dBase, and Oracle might fight over the database turf with vigor and intensity. Borland's Sprint, Microsoft Word, Ashton-Tate's Multimate, and Word Perfect's Word Perfect, may each have several millions of dollars spent on advertising, marketing, and so on to determine who is the main mother in the world of word processing. Programs that sell for $200 to $500 and fall into one of the major software categories can afford such battles.

And if everything that needed to be done in all of computer-dumb fell into one of the big three categories, that would pretty much be the end of the story. However, there are many things we do as part of

powering up the type-o-rama box that involve more mundane operations - much less glamorous but still necessary archiving, compressing, moving of files and displaying of files. Microsoft is not going to go to the expense of marketing an archive utility in any serious fashion. ZModem protocol extensions for odd comm packages is not an area that Lotus is likely to horn in on. And Ashton-Tate is not likely to do the best **DOS** shell in the world as a flagship product. If the truth were known, this is exactly why shareware has caught on. Programmers have written the necessary utilities and marketed them on a shoestring - which is about what most will support.

Hard drives are a blessing. They expand by a factor of a hundred or more the amount of disk storage available and by extension, the number of files that can be stored. Just like the closet in the living room - if it will hold ten coats it ought to take twelve. With hard drives, we can always fill them to whatever capacity is available. One miniscule but still awkward problem many of us face is simply finding where on the hard drive or drives a particular file is located. We may not have used it in a few days, weeks, or months but today we need it and where did we leave it. We can search the disk directory by directory and eventually we will find it. But disk sizes keep growing and some of us are faced with a hundred subdirectories now - never mind files.

WHEREIS is one of the smallest, most narrowly focused utilities we've ever reviewed. It comes in a 630 byte archive that extracts into a full **1280** byte **WHEREIS.EXE** file. It has no documentation and it needs none - the title contains full operating instructions. To use it, you unarchive it and stick the miniscule **WHEREIS.EXE** in any directory specified in a path statement in your **AUTOEXEC.BAT**. That is the entire installation.

If you wonder where a file is on your **C:** drive for example, at the **DOS** command line enter **WHEREIS FILENAME.COM.** In less than a heartbeat, the program finds the first location of **FILENAME.COM** and displays it's full path on screen (\JACK\FILES). The program asks if you want to go to a second location. Press **Y** to find another location that contains a dupe of **FILENAME.COM.** If there are no more, the program simply returns **FILE NOT FOUND.**

WHEREIS searches all subdirectories of the current drive. To search another drive simply change to the desired drive and repeat the search with the **WHEREIS** command.

This program is so small and so limited, it's almost embarrassing to review it. Yet if you've gone through the search process without such a utility, you will immediately recognize what a powerfully useful utility this tiny thing is. **WHEREIS** is very fast, it's very useful, and it is totally free. It doesn't do much, but what it does do, it does very, very, well.

GDP TECHNOLOGIES BBS at (303)673-9470 has all **630** archived bytes available for download locally

.EDITOR'S NOTES

Last issue, I made a brief mention of the assumed right of telemarketing companies to sieze the use of **YOUR** telephone for **THEIR** advertising purposes. I offered the hope that the emerging **CLASS** service technology, including calling party identification, might offer an avenue of resistance. In a couple of recent news stories appearing in the Denver Post, I notice a Mr. **Robert Bulmash,** a 42 year-old paralegal from Chicago, not only shares my anger over these parasites but has developed a much more effective means of fighting back.

When the telephone rings, you are forced, in a very real sense, to answer it. It might be your brother dying in another city, your employer with a very real professional matter requiring your immediate attention, your wife with a disabled automobile calling from a less than cheerful section of town, or one of your daughters with no ride home from the roller skating rink. For any of a number of legitimate, and at times very serious reasons, simply not answering the telephone is **NOT** a viable response to telephone solicitors. If the phone rings you must answer whether it is a legitimate call or a vinyl siding salesman. Incredibly, it would appear that under today's laws and technology, salesmen have the right and the ability to **DEMAND** your attention instantly in your own home.

You could be in the shower, on the throne reading your latest copy of Boardwatch, or in bed either severally or as a group of two perhaps. If Joe's Heating and Cooling want's to talk to you about the condition of your furnace, you're going to talk to him - however briefly. With laws covering almost every inane aspect of our lives, I am just stunned that this has not become the subject of legislation.

I was further appalled to hear one solicitor's rationalization of this situation. "If you don't want to hear it - you can always hang up". I would extend this to point out that if your house burns down - you can always rebuild. If you wreck your car - you can always buy another. This sort of cheerful Jewish fatalism fails to address the real issue. By the time you've answered the telephone, the damage is done.

seemed to operate almost as a **DOS** extension. Instead of reading **C:\BINKLEY** on the XT from **JACK-AT**, you would specify **JACKXT:C:\BINKLEY**. Commands can even be entered into DOS batch files. We loved the print spooling/shared printer feature and the fact that it required **NO CHANGES** in the applications programs. We would like more speed (always in all products) and **COM3/COM4** support.

Most annoyingly, we found that ManyLink would simply refuse to transfer some files. Although we experimented with various names, file types, and so forth, we never could detect any rational pattern to this. Some files were simply ruled **INVALID PATH OR FILE NAME**. Other files from and to the same directories made the trip fine. This did not seem to depend on size, type, file naming conventions, or anything else we could detect. Since this seemed to be entirely random, it cuts down on the usability of Manylink for serious work.

The two PC version lists for **$165** and a work group version supporting up to **199** units in a daisy chain or ring style network goes for **$395**. For the utility gained, we have to rate that as appropriate pricing once the file bug is worked out and the **COM3** and **COM4** ports are added. NetLine, Inc., 85 West Center Street, PO Box 3000, Provo, UT 84603; **(801)373-6000**.

NBS TIME SERVICE

Regular readers will recall our fascination with the National Bureau of Standards Automated Computer Time Service located in Boulder Colorado. The service operates at **(303)494-4775** to provide an accurate time/date mark for synchronizing automated systems and particularly personal computers. There is no logon procedure or passwords. Simply dial the system and you will be greated with **10** to **55** seconds of an **ASCII** text string that transmits each second. The string contains a wealth of information including the current calendar date and Universal Coordinated Time.

To synchronize your PC to the system, you will need software to parse the time and date from the transmitted ASCII string, compensate for the difference between Mountain Daylight Savings Time and Universal Coordinated Time, and update the clock/calendar on your personal computer. IBM compatible owners are fortunate in that the National Bureau of Standards has published a public domain **C** language program titled **NBSTIME.ARC** that does all that and more. In fact, it echoes a special character back to the system in Boulder to compensate for the **20** to **250 ms** of delay inherent in the telephone transmission lines. The system in Boulder times the period between transmitted character and received echo and adjusts the transmission to factor out the delay. **NBSTIME.ARC** is available on many local BBS or on the **Denver PC Boardwatch Roundtable** area of the new General Electric **GEIS** service operating at **1-976-GEIS**. Type **BOARDWATCH** at any prompt to gain access to the **Denver PC Boardwatch Roundtable**.

The **NBS** system doesn't actually operate on a PC or BBS. The service operates on three telephone lines connected on a rotary hunt group system. Each telephone line is connected to an independent time mark generator. These generators comprise a specially designed system coordinated to the atomic clock in Boulder via a **5 MHz** timing signal. Dick Davis of NBS designed the system hardware around a Hitachi microprocessor virtually identical to the Zilog **Z80** microprocessor but with a **512 KB** memory addressing capability. Marc Weiss designed the assembly language software which is actually held onboard in an **EPROM** chip.

Each of the three time mark generators monitor the output of the other two. A majority vote circuit allows any two to take an ailing third unit off line if any notable discrepancy in time appears. All are synchronized to the **5MHz** feed from downstairs where **16** separate cesium-beam atomic frequency standards are located. These frequency standards are monitored and averaged by a **DEC VAX 1170** computer system to calculate the standard time for all civilian activities in the United States. This is the same standard all radio and television stations mark to as well as the source of time for the shortwave radio station WWV transmission heard on **2.5**, **5.0**, **10.0**, **15.0**, and **20.0 MHz** from Fort Collins Colorado. Additionally, an automated voice line is avialable to provide the time at **(303)499-7111**.

LOCAL ACCESS

SNARFQUEST TROIKA

A triumvirate of local BBS have banded together under the SnarfQuest name to form a mini-net much after the fashion of the local Microlink net. The SnarfQuest group seems to be dedicated to Dungeons and Dragons role playing games, Tradewars (an on-line outer space merchant fleet simulation), Chess, and other on-line games.

The original **SnarfQuest I - The Tavern 104/604** operates at **(303)973-9402** under the auspices of Mr. John Denny. The system runs on a Hot **Intel 386** running ostensibly at around **30 Mega-hurries**. John derived the name of the board from a comic strip appearing in a magazine catering to fans of the popular

Dungeons and Dragons game. **SnarfQuest I** also provides some interesting **READMAC** files for download.

SnarfQuest][- The Dragon's Lair 104/314 is actually the newest of the three BBS. Kurt Wiedenhoeft has operated the system for about two months at (303)978-0510 on an **IBM PS/2 Model 80-111** with **115 MB** of storage. The board continues the game theme with a heavy emphasis on TradeWars **1000**. This game allows you to buy and sell various items of merchandise among planets and solar systems - fighting off other players all the time and using your profits to buy more fighter ships so you can attack other players and steal their cargos and so on. Actually, this game should be avoided. Once you catch on to the pace and strategy it can be enormously addictive and it is a real time alligator.

Dax Davis is no newcomer to the Denver BBS scene. Most recently he has run a fantasy/RP game BBS with a strong Chess contingent in **Chivalry BBS**. He joins our trio of gamers as **SnarfQuest]I[- Chivalry's Final Domain** - still **104/46** in the matrix. The system operates at (303)761-1634 and is the only one of the troika to sport a **USR HST 9600 bps** modem.

The three boards not only share the same game theme, they also have a message area echoed between the three of them. We now have two known special theme nets in operation in the Denver area - SnarfQuest and Microlink. Could these mini-alliances of BBS sharing a common theme (and name) be a coming trend?

BYTE SHOP

Dan O'Neal of Littleton Colorado has erected a fairly respectable BBS under the QuickBBS software flag. The system is titled **The Byte Shop** and operates at (303)794-5065. Mr. O'Neal's system is **104/311** in the matrix and features a US Robotics **HST 9600** modem. By now, it is evident that if you need speed in your communications and you connect to BBS in the Denver area, the **USR HST** is almost a forced choice no matter what you may think of their technology. Nearly all 9600 bps capable boards sport the USR brand. Mr. O'Neal has assembled a reasonably well ordered selection of shareware files for download. Additionally, he has selected some fairly interesting echomail topics for import including Lotus 123, dBase, one devoted to humor, a discussion area for Star Trek, and an echo solely devoted to warnings concerning viruses. If you've read our past articles on the subject of viruses you may be aware that we've yet to find the slightest shred of real evidence of their existence. Yet now there is apparently a national echomail con-

ference devoted to the subject. Actually, it seemed to provide mostly coverage of Trojan Horse programs and legitimate software bugs in commercial and shareware titles. Byte Shop is a relatively recent addition to the Denver electronic village and one of its strong points is that you can still get on without battling the busy signal. As Jack Lord was fond of saying: **BOOK HIM DANO!**

CASH CONNECTION

Richard Sweeny of Wheat Ridge has a fairly interesting idea for a BBS. It seems Mr. Sweeny is a financial broker - he arranges private loans between those wishing to lend money, and those who need a loan but for various reasons are unable to obtain more conventional credit. To help match up borrowers and lenders, Mr. Sweeny has started the **CASH CONNECTION BBS** at (303)421-5995. The system operates under OPUS BBS software and just came on line as of July **15, 1988**. Ostensibly, individuals will be able to register either as a borrower or a lender. The service will work much like dial-your-match dating but with money as the objective rather than sex. An interesting concept...let us know how it turns out Mr. Sweeny.

LONG DISTANCE USA

DEFENSE TECHNOLOGY SECURITY BBS

Recall the furor over the transfer of numerically controlled precision milling machinery by Toshiba to the USSR? Ostensibly, this compromised our national security via the transfer of technology to the Soviets that would allow them to manufacture very efficient, and therefore much quieter, submarine propellers. As it turns out, the Department of Defense is quite sensitive about the transfer of computer equipment as well to communist block nations. In fact, to export data equipment overseas, you are required to file for an export license with the **Defense Technology Security Administration**. Fortunately, the service operates a pair of electronic bulletin board systems in the Washington DC area to expedite processing of the export license applications. Both boards run on IBM equipment, provide **2400** bps data capability, and run on **RBBS** version **16.1** software.

The **ELISA I BBS** (Export License Status Advisor) operates at (202)697-6109. The notable thing about this system is that you can use a database program available through one of the doors to actually check the current status of your export license application. By far the more interesting system is **ELISA II** operating at (202)697-3632. This board provides a wealth of information about the Defense Technology Security Administration and an even more fascinating trove of

Whether or not you hang up or buy $7 million dollars worth of light bulbs is mute.

Equally ridiculous is the statement that **"you can get an unlisted number"**. In the first place, it doesn't stop the calls. Many sales calls are made by dialing "blocks" of numbers. Many others are made from a publication titled the Haines Directory that is not necessarily based on the telephone directory. Yet others are based on mailing list information gathered from local businesses that have your name, address, and telephone number from check verifications or product registrations. So unlisted numbers are largely useless in battling sales calls.!

Likewise, I'm loathe to purchase an **"answering machine"**. In the first place, I again feel pressed to spend money to buy a device I don't want solely to defend myself from sales calls. Secondly, my friends and acquaintances simply don't deserve that type of abuse when they call. No matter how vigorously proponents may defend these devices, they are rude, awkward, and place those I do want to talk to in the ridiculous position of speaking to a machine rather than to who they called to speak to. If I call someone I know who uses one of these machines on more than two occasions and encounter one of these little beasties, I simply don't call anymore. It has actually led to some distancing in some of my relationships but as far as I'm concerned, it was by their hand.

Almost two years ago I began offering to listen to salesmen when they called for a flat $25 fee and provide a written critique for $50. It didn't slow things down but it did garner some guffaws. I told some co-workers about this ploy and they thought it was hilarious - stupid - but hilarious. Now I read that Mr. Bulmash of Chicago has actually done it.

Essentially, Bulmash's ploy is that when he receives a solicitation call, he gives the caller his name, address, and telephone number, and informs them that any future calls will be billed at a specified rate for the use of his time and telephone equipment on a for-hire basis. If he does receive a second call from the same company - he sends them a bill. If they don't pay, he files suit in the local small claims court. So far, reports of his collections range from $150 to $250. The point is, he is sending a powerful message to a number of solicitors. Many pay his bill to avoid the court battle no matter how minor it may be.

His latest idea is to form a list of people who do not care to receive sales calls and send the list to some **400** local telephone solicitation firms in the Chicago area (it really is a growth industry). The companies are thus forewarned of the "deal". Bills can then be sent out on the first call and there is no disputing the original **WRITTEN** notice. The sales companies can then endure the additional expense of ensuring no one on the list is called, paying the bills, or going to court.

I applaud Mr. Bulmash's brilliant idea (why didn't I think of that) and bullnecked perseverance. It is a sad but generally true commentary that the burden of improvement in our society is usually borne on the back of some solitary slob who can ill afford the time or the money to do it. And the many corporate, governmental, and charitable organizations we erect as a society are generally too engrossed in their own never ending quest for self-perpetuation to address such issues.

I would offer a practical variation on Mr. Bulmash's approach. Put up a **976** service individuals could call to register their "for-hire" telephone numbers. The call proceeds could be used to finance the publication of the list of available for-hire telephones and mail each week's publication to the telemarketing firms in the area via a mailing list. If an individual on the list is called, he could again call the 976 number and ask the "service" to send out a bill on his behalf. Payment could be directed to the "service" which could extract a suitable billing fee and forward the proceeds to the individual registrant. Small claims filings could be handled much in the same fashion. Eventually, the effectiveness of this would be honed to the point where individuals could simply stop sales calls by dialing the **976** number once a year and paying the $15 or so registration fee on their telephone bills. Then you could pay protection money, a ransome if you will to regain the use of your own telephone.

Inevitably, this editorial will draw some fire from incensed directors of charitable organizations that depend on telephone solicitations for income and feel that their "special" need is oh so deserving. Sorry guys - I don't buy it. No matter how deserving the cause, using my telephone for your fund raising is not appropriate. Drop me a notice in the mail and I'll look it over at **MY** convenience rather than yours. In the meantime, several of us are in bed here in the throne room - taking a shower and writing *Boardwatch.* Stay connected **B-)**

Jack Rickard
Editor

DENVER PC BOARDWATCH

LIST OF AREA CODE 303 ELECTRONIC BULLETIN BOARD SYSTEMS AND ON-LINE INFORMATION SERVICES - SEPTEMBER 1988

TITLE	PHONE	DESCRIPTION	TYPE	BPS	SOFT	CITY	SYSOP
NBS Automated Computer Time	494-4775	ACTS - Sync PC Clock to NBS Atomic Clock	Custom	3/12	Custom	Boulder	Natl. Bureau of Stds.
Adelante 104/93	443-8292	Central/Latin America Social Issues	IBM	3/12/24	Opus	Boulder	Zhahai Stewart
Aerie, The 104/40	292-3162	Science Fiction	IBM	3/12	Opus	Denver	Leland Dirks
AmNet On-line 104/65	1-223-1297	Animal Rights Issues	IBM	3/12	TBBS	Ft. Collins	James Cherry
Arkham Public Library 104/48	444-7686	Tradewars Game/IBM Software	IBM	3/12/24	QuickBBS	Boulder	Neil Beaty
Aurora Chairman	340-1844	City of Aurora Council/Mayor Forum	IBM	3/12	Chairman	Aurora	City of Aurora
Braun's Link	745-0972	Copyrighted Software Downloads???	IBM	3/12	QuickBBS	Aurora	Vthor Braun
Byte Shop 104/311	794-5065	Jokes/Good Echomail/Downloads	IBM	3-96HST	QuickBBS	Littleton	Dan O'neal
Cable Net Opus	933-9359	Excellent Shareware Library	IBM	3/12/24	Opus	Lakewood	Ted Gilmore
Cash Connection	421-5995	Borrower/Lender Financial Matchmaking	IBM	3/12	OPUS	Wheat Ridge	Richard Sweeny
CBA Information System	329-0159	Continental Basketball Association	IBM	3/12	TBBS	Denver	???
Christian Protocol	693-8791	Christian Messages - Bible Text	IBM	3/12/24	TBBS	Denver	Ken Johansen
Club Micro 104/88	832-5850	"C"Language/Database/Communication Files	IBM	3-96HST	Opus	Denver	Don Marquart
CMOS	322-4078	Colorado Mountain Operating Systems	IBM	3-96MIC	Minihost	???	Kevin Truitt
Coco County Airport 104/54	343-6707	TRS Color Computer Support	IBM	3/12/24	Opus	Aurora	Ron Bihler
Colorado Broadcasters 104/42	572-6256	Commercial Radio Frequency Lists	IBM	3/12	Opus	Denver	Lynn Osburn
Comm-Post, The 104/666	534-4646	Astronomy - Tandy 1000/2000 - Jokes	IBM	3/12/24	TBBS	Denver	Brian Bartee
Control Systems	458-6248	IBM/Compatibles Subscription Board	IBM	3-96MIC	RBBS	Denver	Lupe Ramiriz
CP/M SIG INC 104/372	465-1313	Oldest User's Group in Area - CP/M - IBM	IBM	3/12/24	Fido	Broomfield	Al Lundquist
Cyber-Zone, The 104/61	860-0126	Science Fiction/USA Today	IBM	3/12/24	QuickBBS	Denver	Jonathan Wood
D-Link 1 104/411	936-2791	Golden Micro Computer Sales/Support	IBM	3-96HST	QuickBBS	Denver	Bob Wells
Data Bank	494-0167	IBM Messages	IBM	3/12/24	TCOMM	Denver	Guido Binetti
Day's End 104/20	650-5636	Astronomy Files-Telix/SF Echos/USA Today	IBM	3-96HST	Opus	Denver	Chris Day
Denver Central 104/412	758-8720	Trojan List/Sports and Cooking Echoes	IBM	3/12/24	Opus	Denver	Dana Palmblad
Denver Tech Computer	799-4813	Englewood Retail Computer Store	IBM	3/12	RBBS	Englewood	Rolf Anderson
Denver Tech Computer	799-9138	Retail Store - SCO Xenix / C Language	IBM	3-96HST	Comm/men	Englewood	Rolf Anderson
Dog House, The	320-0501	IBM/Atari Downloads - FoRem Net Mail	IBM	12/24	Forem	Denver	Lonnie Shinault
DROID, The	933-1501	On-line Tradewars and Baseball Games	IBM	3/12/24	QuickBBS	Littleton	Leonard Vandermate
Eagle's Nest	933-0701	IBM and Amiga Special Interest Areas	IBM	3/12/24	QuickBBS	Littleton	Ronald Olsen
Education 2000 104/29	449-9807	Education Issues Kindergarten - 12th	IBM	3/112/24	TBBS	Boulder	Roger Salamen
eSoft Support	699-8222	eSoft Inc. TBBS Software Support	IBM	3/12	TBBS	Aurora	Phil Becker
Fido NBS 104/607	497-3934	National Bureau Standards - Jobs SIG	IBM	3/12/24	Opus	Boulder	Cathy Nicollett
Front Range PC Users Group BBS	1-493-4094	Fort Collins Group - Computer Express	IBM	3/12	Wildcat	Fort Collins	Tom Oppenheimer
FutureWave BBS 104/57	440-7425	Games / C Language / MIDI 6PM-7AM	IBM	12/24	Opus	Boulder	Ross Sponholtz
Gay Community 104/19	795-1215	Messages / Downloads for Homosexuals	IBM	3/12	QuickBBS	Littleton	???
GDP Technologies BBS	673-9470	CoreWars Game/C Language/Great Shareware	IBM	3/12/24	Wildcat	Lafayette	Tom Gettys
Grand Junction MUG	1-241-1966	Grand Junction MUG - Ham/Packet Radio	IBM	3/12	PCBoard	Grand Junction	Wayne Hunt
Grizzly King	666-0824	Freeware/Colorado Outdoors/Programmers	IBM	3/12	TBBS	Lafayette	Bob McDuffee
Grotto, The	694-9050	Amiga, Pascal - Ebert Personal Computers	IBM	3/12/24	TBBS	Aurora	Vincent Veritas
HP Haven 104/312	427-6976	Tradewars/On-line Games/ 5PM-7:30 AM	IBM	3/12/24	QuickBBS	Westminster	Mark Willecke
Info-Net BBS	680-1648	Computer's Plus Board	IBM	3/12/24	RBBS	Aurora	Computer's Plus
Into The Wind 104/63	939-9272	Support for Shamaal Software 10P-11A	IBM	3/12/24	Wildcat	Boulder	Dana P'simer
Investment Lounge	759-3721	Excellent Investment/Financial Topics	IBM	3/12	TBBS	Aurora	Mark Greve
Isle of Man	447-1942	Gay Community BBS	IBM	3/12	RBBS	Boulder	???
Lakewood Department of Safety	987-7388	Police Sponsored - Law Enforcement Msgs	IBM	3/12	RBBS	Wheatridge	Larry Scheideman
Lodge, The	420-0305	Arvada Quick BBS Board	IBM	12	QuickBBS	Arvada	Harold "Monty" Montrose
Manville Info Services 104/978	978-3946	Business Software / Apple Macintosh	IBM	3/12	Fido	Littleton	???

Name	Phone	Description	Computer	Baud	Software	City	Sysop
Master Work, The 104/55	341-6614	Recently Up - General Communications	IBM	12/24	Opus	Aurora	Roy Prickett
Metamorphasis	1-772-7229	PCB-Echo Net/260 MB of Files/Online Game	IBM	3/12/24	PCBoard	Lafayette	Tony Ferris
Micro World Infomat	987-2671	RBBS-IBM-Commodore-Amiga-Atari 7PM-8AM	IBM	3/12	RBBS	Lakewood	Leonard Vandemate
Micro-Date 104/64	455-4793	Matchmaking/ELIZA Psychoanalyst On-Line	IBM	3/12/24	TBBS	Littleton	John Anderson
Microlink B 104/108	972-9600	Good Download Library - USA Today News	IBM	3-96HST	TBBS	Littleton	Girard Westerberg
Microlink C 104/53	455-9600	Professional Computer Sales Co.	IBM	3/12/24	TBBS	Denver	John Anderson
Microlink D 104/711	467-9704	Professional Computer Sales Co.	IBM	3-96HST	QuickBBS	Golden	???
Microlink Minus Two 104/204	329-9598	Professional Computer Sales Inc.	IBM	3/12	TBBS	Denver	Paul Smith
Mile Hi Tech Fidonet 104/56	973-9338	Fido News/List	IBM	3/12/24	TBBS	Littleton	Oscar Barlow
Mile High Net	671-7308	Fido Board	IBM	3/12/24	Fido	Aurora	Dave Miller
New Age Bulletin Board, The	665-9152	Inner Development, Natural Health&Envir	IBM	3/12	TBBS	Lafayette	Harold Piser
NoName BBS	988-5765	Selected Quality Shareware - New Users	IBM	3/12/24	Minihost	Lakewood	Jon Johnson
Nurse Link 104/52	270-4936	UCHSC School of Nursing	IBM	3/12/24	TBBS	Littleton	Chuck Mastrini
OKY BBS	494-0533	Armenian Electronics Consultant	IBM	3/12/24	QuickBBS	Boulder	Onnig Kouyoumdjian
On-Line Consulting 104/45	449-5251	Consultant Directory/Desktop Publishing	IBM	3/12/24	Opus	Estes Park	Lee Lasson
On-Line Shopping Service	442-5125	Boulder Home Grocery Delivery $5 + 5%	IBM	3/12	Chairman	Boulder	Pete Dempsey
P2B2 S 104/51	329-3337	Public Psychiatry / AI Themes 6PM-8AM	IBM	3/12/24	QuickBBS	Denver	Claude Warren
PCjr-NET 104/904	789-4610	IBM PC Jr. Technical Info /Radio Comm	IBM	3/12/24	Opus	Englewood	Phil Kaiser
Phoenix TBBS 104/739	841-9570	USA Today Newspaper/4 lines/INFO-MAT Mag	IBM	3-96HST	TBBS	Parker	Larry Kayser
Pineclitte 104/28	444-7073	170 Meg - Online Order for CDB Systems	IBM	3/12/24	Opus	Boulder	Craig Baker
Professional System, The	740-2223	Writers, Lawyers, EDP Auditors	IBM	3/12	TBBS	Littleton	Bob Voorhees
Quick BBS Support Board 104/24	423-3114	Home of Quick BBS Software	IBM	3/12/24	QuickBBS	Arvada	Adam Hudson
R.A.B.B.I.T.	757-9509	Colorado Highway Department - Planning	IBM	3/12	TBBS	Denver	Colorado Dept. Highways
Rocky Mountain RBBS	750-2107	INFO NEEDED	IBM	3/12	RBBS	Aurora	Steve Kornreich
Serendipity	465-3729	IBM, Epson Equity, TRS-80 Club Msgs	IBM	3/12	RBBS		Terry Connolly
Shepherds Bush 104/77	497-6968	IBM Technical - Utilities	IBM	3-96HST	Opus	Boulder	Kent Leonard
Short Line 104/36	778-7312	Opus/BinkleyTerm Support/Pascal/ C	IBM	12/24	Opus	Lakewood	Alan Applegate
Silver Streak, The	790-2534	Science/Engineering/Turbo Pascal Utils	IBM	3/12/24	Wildcat	Littleton	Dennis McKinney
SnarfQuest I 104/604	973-9402	The Tavern - Hot 386 with Games/ReadMACs	IBM	3/12/24	Opus	Littleton	John Denny
SnarfQuest][104/314	978-0510	The Dragon's Lair - IBM PS2 80 w 115 MB	IBM	3/12	QuickBBS	Aurora	Kurt Wiedenhoeft
SnarfQuest][[104/46	761-1634	Chivalry's Final Domain -Tradewars/Chess	IBM	3-96HST	QuickBBS	Aurora	Dax Davis
Sound Doctrine Bulletin Board	680-7209	Christian BBS / Sound Doctrine Church	IBM	3/12	TBBS	Aurora	Tim Williams
Space Environment Service Cntr	497-5000	NOAA Solar Flare Forecast / Advisory	IBM	3/12	PEBS	Boulder	US Dept of Commerce
Space Network	494-8446	Space Exploration Information	IBM	3/12/24	TBBS	Boulder	Tom Meyer
Squirrel's Nest	1-242-7977	Grand Junction BBS	IBM	3/12/24	PCBoard	Grand Junction	Allan Worley
Steamboat Information	1-879-6741	Info on Steamboat Springs Area	IBM	3/12	TBBS	Steamboat Springs	???
Stonehenge 104/39	497-6051	C Program Files - C Echo Area 5PM-8AM	IBM	3/12/24	Opus	Boulder	Steve Roughton
TBBS Net 104/23	699-3248	The B)read B)oard System Support	IBM	3/12/24	TBBS	Aurora	Phil Becker/eSoft Inc.
Terus Public BBS 104/43	469-7161	MINDS AI TextBase Indexer Support	IBM	3-96HST	Opus	Broomfield	Todd Hill
Terus RegUser '104/44	341-1404	MINDS Online Textbase - USA TODAY	IBM	3-96HST	Opus	Aurora	Bart Henthom
The 8th Sea 104/610	252-9235	Net 104 Coordinator - Lots of Echomail	IBM	3/12/24	QuickBBS	Northglenn	Rod Lamping
This End Up 104/30	429-2445	Denver PC Boardwatch/USA Today	IBM	3/12/24	Opus	Westminster	Steve Carnes
Trout Unlimited	499-2828	Trout Fishing / Water Condition Reports	IBM	3/12	Fido	Boulder	Ralph Stewart
Twin Peaks PCBoard	1-651-0225	On-line Games	IBM	3/12/24	PCBoard	Longmont	Ken Krueger
UniSource	721-6640	4-line pay service - $2.40 hourly	IBM	3/12	Galacti	Littleton	Bill Flowers
USA Today Distribution 104/555	973-4222	USA Today Newspaper On-line	IBM	12/24	QuickBBS	Littleton	Jack Rickard
Value Line, The	363-0422	On-line Mall/Shopping 8PM-5AM	IBM	3/12	QuickBBS	Aurora	Chris Millikin
Watchdesk, The 104/66	450-0822	Safety - Arson - Hazardous Material	IBM	3/12/24	QuickBBS	Thornton	Emit Hurdelbrink
Waterton Computer Club	977-7096	Martin Marietta Employees - 5PM-7AM	IBM	3/12/24	RBBS	Denver	Ken Beaudrie
C.A.R.L. Denver	830-0519	Colorado Alliance of Research Libraries	Tandem	.24	Custom	Denver	N/A
C.A.R.L. Denver	830-1165	Colorado Alliance of Research Libraries	Tandem	3/12/24	Custom	Denver	N/A
C.A.R.L. Denver	830-1546	Colorado Alliance of Research Libraries	Tandem	.12	Custom	Denver	N/A
C.A.R.L. Denver	830-1547	Colorado Alliance of Research Libraries	Tandem	.12	Custom	Denver	N/A

DENVER PC BOARDWATCH

LIST OF AREA CODE 303 ELECTRONIC BULLETIN BOARD SYSTEMS AND ON-LINE INFORMATION SERVICES - SEPTEMBER 1988

TITLE	PHONE	DESCRIPTION	TYPE	BPS	SOFT	CITY	SYSOP
C.A.R.L. Denver	830-1548	Colorado Alliance of Research Libraries	Tandem	12	Custom	Denver	N/A
C.A.R.L. Denver	830-2199	Colorado Alliance of Research Libraries	Tandem	3/12/24	Custom	Denver	N/A
C.A.R.L. Denver	830-2241	Colorado Alliance of Research Libraries	Tandem	3/12/24	Custom	Denver	N/A
C.A.R.L. Denver	830-2265	Colorado Alliance of Research Libraries	Tandem	3/12/24	Custom	Denver	N/A
C.A.R.L. Denver	830-2297	Colorado Alliance of Research Libraries	Tandem	3/12/24	Custom	Denver	N/A
C.D. Players	825-0419	Computer Discount On-line Store/Amiga	Amiga	3/12/24	TBBS	Denver	Tony Scott
Aces High	329-6579	Apple Programming/Messages	Apple	3/12	GBBS	Denver	Glenn Hayhurst
Apple Mountain Times	428-0372	Smoke Signal Software/PRIME BBS Support	Apple	3/12/24	Protree	Denver	Vince Cooper
APSNet	693-6737	Aurora Public Schools Network	Apple	3/12/24	GBBS	Aurora	Columbia Middle School
Box's Cabin, The	424-9185	Apple / Technical Notes	Apple	3/12/24	Protree	Arvada	Kent Roberts
C.A.C.H.E.	745-4960	CO Apple & Compatible Home Enthusiasts	Apple	3/12/24	GBBS	Denver	???
City Morgue, The	442-8498	Necromaniacal Fixation With Stiff Bodies	Apple	12/24	GBBS	Boulder	???
Club House, The	756-9134	RP Games - Golf Format - Messages	Apple	3/12	GBBS	Denver	Pinsetter
Code 5150	696-6673	Lunatic Discussions / Crazy People	Apple	3/12/24	GBBS	Aurora	Chris Thilges (Grunt)
Cutting Board, The	427-2413	60 MB Apple Software and Messages	Apple	3/12/24	GBBS	Lakewood	Cutter
Dark Side of the Moon	469-3437	Matchmaking / Dating for Teens	Apple	3/12	Protree	Broomfield	Marc Anderson
Denver Deal-Net	989-9245	Hearing Impaired/Computing	Apple	3/12	Protree	Lakewood	David Sheneman
Discovery, The	449-8946	Music / General Messages	Apple	3/12	AlphaIII	Denver	???
Funny Farm	989-0915	Apple Only BBS	Apple	12/24	???	Lakewood	???
Genesis Project	287-8267	Apple II General	Apple	3/12/24	Protree	Commerce City	Gene Humbert
Greeley-Com-Net	1-351-8861	Modem Users Board	Apple	3/12/24	GBBS	Greeley	Lowell Shatraw
L&L Support	420-3568	Primary GBBS Pro Software Support BBS	Apple	3/12/24	GBBS	Arvada	Lance Taylor-Warren
Lund of Lindon	987-2094	Fantasy Runequest Games	Apple	3/12	AlphaIII	Lakewood	???
Last Chance BBS	690-0194	Entertaining Logon Questionaire	Apple	12/24	GBBS	Denver	Captain Ozone
LES-COM-NET	233-5824	Lesley College Communications Network	Apple	3/12	GBBS	Lakewood	George Willett
Mom's BBS	690-4913	General Message/Socializing	Apple	3/12	ALFA-III	???	???
Next Generation	425-6235	On-line Games	Apple	12/24	Protree	Golden	Tony ???
Odyssey III	691-0169	Adult(18) / Sex Oriented 5PM-8AM	Apple	3/12	GBBS	Denver	Sundance
S.O.B. Lanes, Inc.	452-6902	Apple Board with Bowling Theme	Apple	3/12	GBBS	Westminster	Simon
Sheridan & Associates	935-1489	Buy / Sell / Trade - Chess History	Apple	3/12	GBBS	Denver	Ken Sizer
Timberline Saloon	798-1207	Apple II - Foul Language a Specialty	Apple	3/12	GBBS	Denver	Sam Walsh
Trekker World	366-5011	Star Trek Fanzine 7AM-10PM	Apple	3	GBBS	Aurora	Robert Morgan
Bavarian's Gausthaus	367-5877	New Atari BBS Software System	Atari	3/12	Express	Aurora	Bavarian
Charlotte's Web	367-0668	Atari BBS	Atari	3/12/24	Carinall	Aurora	Bob and Charlotte
Four Wheeling BBS, The	469-4954	Jeeping / Camping / Outdoors	Atari	3/12	Forem	Broomfield	John Ferguson
Generic BBS	1-857-6881	Titanic Historical Society Information	Atari	3/12	BBS Exp	Fort Lupton	L.A. Sneeringer
Mile High Forem	431-1404	Outstanding Atari ST Database - HST 9600	Atari	3-96HST	Forem	Arvada	???
Mycroft	777-8898	Horizon Computer/National Atari BBS List	Atari	3/12	TODAMIS	Denver	Phil Michaelson
Predacon	988-6886	Atari 8 bit / ST with 10 MB	Atari	3/12	Carina	Lakewood	Brad Baumbach
Ron and Shannons BBS	978-0298	Atari Support 5.4 MB XIE 130	Atari	3/12/24	OASIS	Englewood	Ron/Shannon Sellers
Skyline Computers	457-0320	Atari ST Support, Files, etc.	Atari	3/12/24	Forem	Denver	Dave Lloyd
Vault, The	796-0539	USAF/ZMAG Member	Atari	3/12	Forem	Englewood	Craig Steiner
White Runes of Tinuviel	972-8566	Tolkien Subjects/Dungeons and Dragons	Atari	3/12	STadel	Littleton	Andy Strasheim
ZAPI	367-4103	Atari/ST/8 Bit	Atari	3/12	Oasis	Aurora	???
Phasar	745-4305	Teen Conversation - Advice Column	C-128	3/12	C-Net	Aurora	Roy Rush
Regimental Headquarters	375-9556	Commodore - Military Theme	C-128	3/12	C-Net	Denver	Bob Greear
Albuquerque Starport	494-7224	Commodore Network Systems International	C-64	3/12	C-Net	Boulder	Greystoke Mindmaster

BBS Name	Phone	Description	Computer	Baud	Software	City	Sysop
Colorado Commodore Club BBS	751-3448	Commodore Computer Info	C-64	3/12	C-Net	Northglenn	???
Comm-Net Information Service	340-2473	C-64/C-128/Amiga Info-Dnlds-Messages*	C-64	3/12	Custom	Aurora	Tele-Net Inc.
Comm-Net Information Service	366-2341	Excellent Info for Commodore Products*	C-64	3/12	Custom	Aurora	Tele-Net Inc.
Comm-Net Information Service	366-2744	C-64/C-128/Amiga Info-Dnlds-Messages*	C-64	3/12	Custom	Aurora	Tele-Net Inc.
Comm-Net Information Service	366-3898	Service Jokes/Weather/Sports/Database*	C-64	3/12	Custom	Aurora	Tele-Net Inc.
Comm-Net Information Service	366-7177	C-64/C-128/Amiga Info-Dnlds-Messages*	C-64	3/12	Custom	Aurora	Tele-Net Inc.
Dark Crystal, The	322-2589	Role Playing Games - Commodore	C-64	3/12	C-Net	Denver	Steve Boyd
Enterprise	320-6470	StarTrek Theme with 3.6 MB Software	C-64	3/12	C-Net	Denver	Mr. Spock
Hack Shack	688-8406		C-64	3/12	C-Net	Castle Rock	???
Ice Palace	494-4934	Commodore Board with Chilly Theme	C-64	3	C-Net	Boulder	Snowbird
Laboratory BBS/SUPERTAC	287-5274	Commodore with Laboratory Theme	C-64	3/12	C-Net	Denver	Professor Beaker
Nunnery, The	467-1240	Foul Language - C-64 BBS List	C-64	3/12	C-Net	Arvada	The Nun
Phone Connection	426-7969	Commodore	C-64	3/12	C-Net	Westminster	The Lineman
Realm, The	937-0215	Royal Theme - Complete with King	C-64	3/12	C-Net	Lakewood	Bob Hennessy
Spam Mania	423-0348	Areas Longest Logon Message	C-64	3/12	C-Net	Arvada	Spam-Master
Vern's Terminal Exchange	433-1150	Commodore Messages/Downloads/Ads	C-64	3/12	Ivory	Denver	???
Computer Know How	279-0224	Hard Disk Installation / Tech Support	CP/M	3/12	ZBYE	Golden	John Holmgren
Electronic Locksmith RCP/M	698-1623	50M Downloads (CP/M & MS-DOS)	CP/M	3/12/24	PBBS	Littleton	Steve Ekwall
Fantasy Mountain PBBS	278-8369	Deaf and Handicapped Issues ASCII TTY	CP/M	3/12/24	PBBS	Golden	Steve Shockley
Career Connection/DRUG	671-0801	Job/Resume/Denver Rainbow Users 7PM-7AM	DEC100	3-96HST	Fido	Aurora	Jim Turner
Mile High Epson User Group BBS	752-2943	MHEUG Club Board	EPSON	3/12/24	TBBS	Aurora	Dale Bucknam
Dialamatch 118/The Brokerage	796-9721	Adult Matchmaking	Franklin	3/12/24	DYM	Englewood	Bob Simpson
Experience Software	798-0792	Franklin Messages	Franklin	3	Network	Littleton	Experience Software
Den HUG	331-0982	Denver Heath/Zenith User Group	Heath	3/12	PBBS	Wheatridge	Larry Means
World Peace PBBS	320-4822	Current Events, Politics, RCP/M	Heath	3/12/24	PBBS	Denver	Bucky Carr
HP-BBS 104/34	1-229-9719	Jokes, Amazing but True stories,	HP-Vectra	3/12	PBBS	Fort Collins	Rob Diehl
Boulder MAC Maniacs 104/49	530-9544	Apple Macintosh Messages and Files	MAC	3/12	G3BS	Louisville	Ed Fenner
LaserWriting Desktop Service	741-4122	Laser Printing/Scanning/Linotronic 300	MAC	3/12	RedRyder	Denver	Bill Wright
Magic	791-8732	Macintosh / Apple - 2.3 MB Stackware	MAC	3/12	RBBS	Littleton	Steve Sande
Mile High Mac Meet	758-9159	Denver Macintosh Users Group	MAC	3-96HST	WWIV	Denver	Jon Taylor
Publishing Resources Inc.	442-2011	Laser Printing/Publishing/Linotronic	MAC	3/12	RedRyder	Boulder	???
Radscan	1-675-3214	Enter RADSCAN as password	PDP-11/45	3/12	RSTS9.4	Rangely	John Henderson
Radscan	1-675-3225	Rangely PDP11 BBS Multiline - Games	PDP-11/45	3/12	RSTS9.4	Rangely	John Henderson
Radscan	1-675-3326	Password RADSCAN -	PDP-11/45	3/12	RSTS9.4	Rangely	John Henderson
Boulder Public Library System	444-2057	Library Research	Tandem	3/12	Custom	Boulder	Eyring Research
Boulder Public Library System	444-2074	On-Line Card Catalog - Member C.A.R.L	Tandem	12	Custom	Boulder	Eyring Research
Kings Bench 104/615	377-6725	Compatible Computer Info Exchange	TANDY1000	3/12/24	Fido	Denver	Ralph Allison
Blue Planet	979-7299	Space Wars Game	Tandy2000	3	???	Littleton	Tom Nielson
Computer Linkage 104/444	499-1022	TI 99/4A Fido	TI	3/12/24	Fido	Boulder	Ron Kuseski
Minds of Mines (MOM) BBS	273-3989	CSM Artificial Intelligence/Geotechnical	TI	3/12/24	Tigger	Golden	Joe Applegate
Niteline PBBS	277-1447	Texas Instruments - Lists 193 TI BBS	TI 99/4A	3/12	Paradigm	Golden	Keith Amann
Controller Board/TBBS Island	690-9423	Computer Supplies - Online Sales	TRS	3/12	TBBS	Aurora	Mike Hastings
Crossroads	499-0457	Discussion	TRS	3/12	TBBS	Lakewood	Mark Bradford
Crossroads	989-8397	Discussion	TRS	3/12	TBBS	Lakewood	Mark Bradford
Dinosaur Board	1-652-3595	Obsolete Computer Support/Adventure Game	TRS	3/12	TBBS	Niwot	Chris Anderson
King's Market Bookshop	665-6091	Books, Writers, On-line Adventure Games	TRS	3/12	TBBS	Boulder	Jim Burt
Photo Tech	781-1079	TRS 80 / HAM / Video / Camera	TRS	3/12/24	TBBS	Englewood	Jim Gerritz
PSINet	985-2634	Parapsychology / Near Death Experiences	TRS	3/12	TBBS	Denver	William Tedder
Alpha BBS/Intercomex	367-1935	Enter ALPHA - Ham Radio/Space Topics	Unix Mini	3/12	UNaXcess	Denver	Cyro Lord/Robert Brumley
Temple of Doom	771-9523	INFO NEEDED	unknown	3/12	???	Englewood	???
GLOBAL Information	286-7914	Fee Subscription / Software Database	VAX	3/12	Custom	Denver	Jim Comstock
Discordian Society	969-8195			12/24			Steven Crandall

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Littleton, CO 80127

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